

CLAIMS

What is claimed is:

1. Method of producing an enveloping worm including generation of an enveloping worm thread surface by a cutter rolling around a base circle on a cutting plane with simultaneous rotation of an enveloping worm blank around an axis of said enveloping worm, where a cutting edge of said cutter furthermore rotates around a tooling axis.
2. Method of producing an enveloping worm as recited in claim 1 where said tooling axis has additional motion, in direction normal to cutting plane;
3. Method of producing an enveloping worm as recited in claim 1 where said tooling axis has addition motion by changing an angle between said tooling axis of rotation and cutting plane.
4. Method of producing an enveloping worm as recited in claim 1 where radius of rotation of said cutting edge is equal to or bigger than the maximum radius of convex curvature of said worm thread.
5. Method of producing an enveloping worm as recited in claim 1 were radius of rotation of said cutting edge is equal to or smaller than the maximum radius of concave curvature of said worm thread.
6. Method of producing an enveloping worm as recited in claim 1 including placement of said cutter in a new position defined by reposition of cutting plane from original position to said position.
7. Method of producing an enveloping worm as recited in claim 6, where said reposition of said cutter from original position into said new position is defined by turning said cutter relative to said base coordinate system and said enveloping worm axis of rotation.
8. Method of producing an enveloping worm as recited in claim 6, where said reposition of said cutter from original position into said new position is defined by transferring said cutter relative to said base coordinate system and enveloping worm axis of rotation.
9. Method of producing an enveloping worm as recited in claim 6, where said reposition of said cutter from original position into said new position is

defined by combinations of transferring and turning said cutter relative to said base coordinate system and said enveloping worm axis of rotation.

10. Method of producing an enveloping worm as recited in claim 6, wherein placement of said cutter in said new position is for machining said convex surface of said enveloping worm thread.

11. Method of producing an enveloping worm as recited in claim 6, wherein placement of said cutter in said new position is for machining said concave surface of said enveloping worm thread.

12. Method of producing an enveloping worm including generation of an enveloping worm thread surface using helical cutter that is placed by tooling axis in center of a base circle, where an enveloping worm blank rotates around an axis of said enveloping worm blank and said cutter and said enveloping worm blank have relative motion around a tooling axis to said cutter and said cutter furthermore has linear motion along said tooling axis.

13. Method of producing an enveloping worm as recited in claim 12 where it has additional worm blank with synchronized rotation and said cutter generates surfaces from two worm blanks simultaneously.

14. Method of producing an enveloping worm as recited in claim 12 where it has two additional worm blanks with synchronized rotation and said cutter generates surfaces from three worm blanks simultaneously.

15. Method of producing an enveloping worm as recited in claim 12 where it has three additional worm blanks with synchronized rotation and said cutter generates surfaces from four worm blanks simultaneously.

16. Method of producing an enveloping worm as recited in claim 12 where said helical cutter has straight cutting edges profile.

17. Method of producing an enveloping worm as recited in claim 12 where said helical cutter has crown cutting edges profile.

18. Method of producing an enveloping worm as recited in claim 12 where said helical cutter has involute cutting edges profile.